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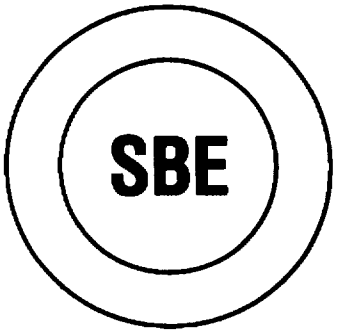
Comments of the Society of Broadcast Engineers, Inc.

RM 9418
TIA Petition to Allow Digitial Modulation in the 2, 2.5, 7 and 13 GHz BAS Bands, Plus Other Changes



March 5, 1999

SOCIETY OF BROADCAST ENGINEERS, INC.
Indianapolis, Indiana

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 25, 74, 78, 90,	)	RM Number 9418
and 101 of the Commission's Rules to	)	
Facilitate Fixed Point-to-Point Terrestrial	)	
Microwave Radio Service Licensee Use	)	
of the 23 GHz and 10 GHz Bands and to	)	
Eliminate Certain Inconsistencies in	)	
Such Rules	)	

To: The Commission

Comments of the Society of Broadcast Engineers, Inc.

The Society of Broadcast Engineers, Incorporated (SBE), the national association of broadcast engineers and technical communications professionals, with more than 5,000 members in the United States, hereby respectfully submits its comments in support of the above-captioned Petition for Rulemaking proposing to allow digital modulation in the 2, 2.5, 7 and 13 GHz Television Broadcast Auxiliary Service ("TV BAS") microwave bands, and other changes.

SBE Supports Certain Aspects of TIA Petition

1. On March 6, 1998, the Fixed Point-to-Point Communications Section of the Wireless Communications Division of the Telecommunications Industry Association ("TIA") filed a Petition for Rulemaking proposing to make certain changes in the rules governing fixed point-to-point microwave stations operating under Parts 25, 74, 78, 90 and 101 of the FCC Rules ("TIA Petition"). Included in the TIA Petition is the proposal to allow digital modulation by stations operating in the 2, 2.5, 7 and 13 GHz TV BAS bands. Currently Section 74.637(c) of the FCC Rules only allows digital modulation in the 6.5, 18 and 31 GHz TV BAS bands.[1]

2. The TIA Petition also proposes to modify[2] the minimum path length equivalent isotropic radiated power ("EIRP") limit of Section 74.644 to eliminate the 25 dB step-function reduction in the allowable EIRP, and to substitute a gradual reduction formula, similar to that used in

[1] TIA Petition, at Page A27 and Pages B3/4.
[2] TIA Petition, at Pages A28/29 and Pages B5/6.

the Private Operational Fixed Service ("POFS") and Common Carrier rules; that is, the formula

$$EIRP_{max} = 55 - 40\log(A/B)$$

would be substituted for the present Section 74.644 formula,

$$EIRP_{max} = 30 - 20\log(A/B)$$

where

$EIRP_{max}$ = maximum allowable EIRP in dBW for paths shorter than 17 kilometers at 2, 2.5, or 7 GHz, or shorter than 5 kilometers at 13 GHz

A = minimum path length requirement in kilometers: 17 km at 2, 2.5, and 7 GHz; 5 km at 13 GHz

B = actual path length in kilometers

3. On November 16, 1998, SBE filed comments in support of the TIA Petition, which, as of that date, had yet to be assigned a Rule Making number. SBE urged prompt action on the TIA Petition.

4. On February 5, 1999, the FCC assigned the TIA Petition Rule Making Number 9418, and issued a Public Notice requesting comment on the filing. These further SBE comments are in continued support of certain aspects of the TIA Petition.

5. Because of the need for TV stations to expand their studio-to-transmitter link ("STL") capability to accommodate the station's digital television ("DTV") channel, the TV BAS Rules need to be promptly amended to allow digital modulation, or a combination of both analog and digital modulation, especially for the 7 and 13 GHz TV BAS bands. Indeed, several manufacturers of TV BAS microwave radios are currently offering such radios for the 7 GHz TV BAS band, even though the Rules do not appear to allow digital modulation in that band and FCC Type Acceptance or Notification appears to have not been obtained. Although SBE has received "opinions" from two FCC staff that the Rules do not actually prohibit digital modulation in the 2, 2.5, 7 and 13 GHz TV BAS bands, none of those stating these opinions have yet been willing to make the statement in writing.

Equipment Acceptability and Emission Designator Issues

6. This introduction of hybrid radios and all-digital radios has created confusion in the TV industry regarding their acceptability, both from an equipment authorization standpoint, an emission designator standpoint, and a license ability standpoint. This uncertainty benefits no one, and could potentially delay the implementation of digital television ("DTV"), as an inability for a TV station to relay its digital signal from its studio to its DTV transmitter site must negatively impact the roll out of the DTV service. Since no additional spectrum has been assigned to the TV BAS, and since in most markets the 7 and 13 GHz TV BAS bands are fully loaded, the ability of a hybrid or digital radio to combine both an NTSC and a DTV signal in the same 25 MHz bandwidth now used for just the NTSC STL is an urgently needed option for TV broadcast stations.

7. The Type Acceptance/Notification issue was made moot by the October 8, 1998, elimination of Type Acceptance/Notification for fixed, point-to-point microwave transmitters (but not for mobile transmitters used by TV Pickup stations), by ET Docket 97-94. Now each manufacturer can simply Verify its microwave radios.

8. However, the emission designator question still needs to be resolved, and the TIA Petition would be the perfect venue to do so. In that regard, SBE submits that a hybrid radio combining a conventional FM video analog signal with a digitally-modulated signal must use a dual emission designator such as "15M0F9W/10M0D7W" rather than the 25M0F9W emission designator used for conventional FM video analog STLs. There is, of course, precedent for such dual emission designators: NTSC TV transmitters and TV Translator/LPTV transmitters have for years used the dual emission designator 5M75C3F/250KF3E. Of course, for an all digital radio, there is no question that the emission designator must change; for example, to 25M0D7W.

Need for Interim Policy for Hybrid and Digital Radios

9. SBE therefore urges the Commission to promptly proceed to a Notice of Proposed Rule Making, so that parties can comment on the proposal and the rulemaking can be brought to completion. Because of the immediacy of the need for hybrid radios, SBE urges the Commission to issue a Public Notice indicating that pending the completion of this rule making, stations demonstrating that converting to a hybrid emission or to an all-digital emission would not cause interference to adjacent-channel links may request a waiver of Section 74.637(c) of the FCC Rules, subject, of course, to the final outcome of this instant

proceeding. The Commission should also use such a Public Notice to clarify that changing an STL from analog to hybrid or from analog to digital requires a Form 313 filing documenting these changes, even if there are no changes in the station's equivalent isotropic radiated power ("EIRP"), location, and transmitting and receiving antennas.

10. SBE expects that in the near future several, if not all, of the microwave radio equipment manufacturers will have derived the necessary desired-to-undesired ("D/U") ratios for digitally-modulated radios and for hybrid, digital and analog modulated radios. While SBE anticipates that the current 60 dB D/U criteria for co-channel stations will continue to be valid for hybrid or digital radios, the ratio required to protect adjacent-channel stations will most likely be more rigorous than now necessary for adjacent-channel analog links (typically 0 dB D/U) because of the significantly greater bandwidth occupancy of a digitally modulated or combined analog and digitally modulated radio compared to the effective bandwidth of a conventional FM video analog radio. It is, of course, imperative that TV stations planning to modify their analog STL to a digitally modulated STL or to a combined analog/digital STL know what D/U ratios are necessary to protect co-channel and adjacent-channel links, and then to check that those D/U ratios would, if fact, be provided to those other stations. It is also in the interest of stations planning to modify their STL to know what co-channel and adjacent-channel D/U ratios their new receiver will need to see <u>from</u> existing analog links, to ensure that the modified path does not <u>receive</u> interference. The prompt issuance of a Notice of Proposed Rule Making ("NPRM") would help provide the catalyst for the several manufacturers of TV BAS radios to finally derive and publish these as yet unavailable ratios.

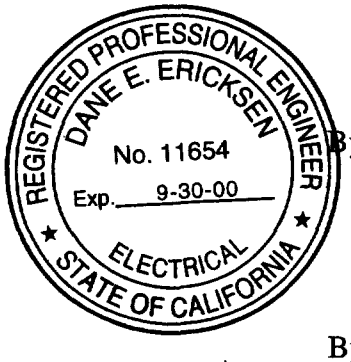
Summary

11. SBE supports at least two aspects of the March 6, 1998, TIA Petition for Rulemaking, and urges the Commission to immediately proceed with a NPRM in response to the TIA filling. SBE further urges the Commission to promptly issue a Public Notice addressing conditions under which hybrid or all digital radios may be used during the pendancy of this rule making.

Respectfully submitted,

Society of Broadcast Engineers, Inc.

By _____
Edward Miller, CPBE
President



By _____
Dane E. Ericksen, P.E., CSRTE
Chairman, SBE FCC Liaison Committee

By _____
Christopher D. Imlay, Its Counsel

March 5, 1999

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CERTIFICATE OF SERVICE

I, Judith L. Wing, do hereby certify that copies of the foregoing COMMENTS OF THE SOCIETY OF BROADCAST ENGINEERS, INC., were served this 5th day of March, via first class mail, postage prepaid, upon the following:

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